

UNIVERSITY OF ALBERTA

# folio

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## Single molecule transistor could revolutionize electronics

*Conventional technology challenged by landmark discovery*

By Scott Lingley

University of Alberta researchers have proven the potential for constructing electronic circuitry on a molecular scale, a breakthrough that could shatter the limitations of conventional transistor technology and pave the way for smaller, faster, cheaper microelectronic devices.

The report by National Research Council National Institute of Nanotechnology's Molecular Scale Development Group, led by U of A physics professor and iCORE Chair in Nanoscale Information and Communication Technologies Dr. Robert Wolkow, has been published in the June 2005 issue of the journal *Nature*.

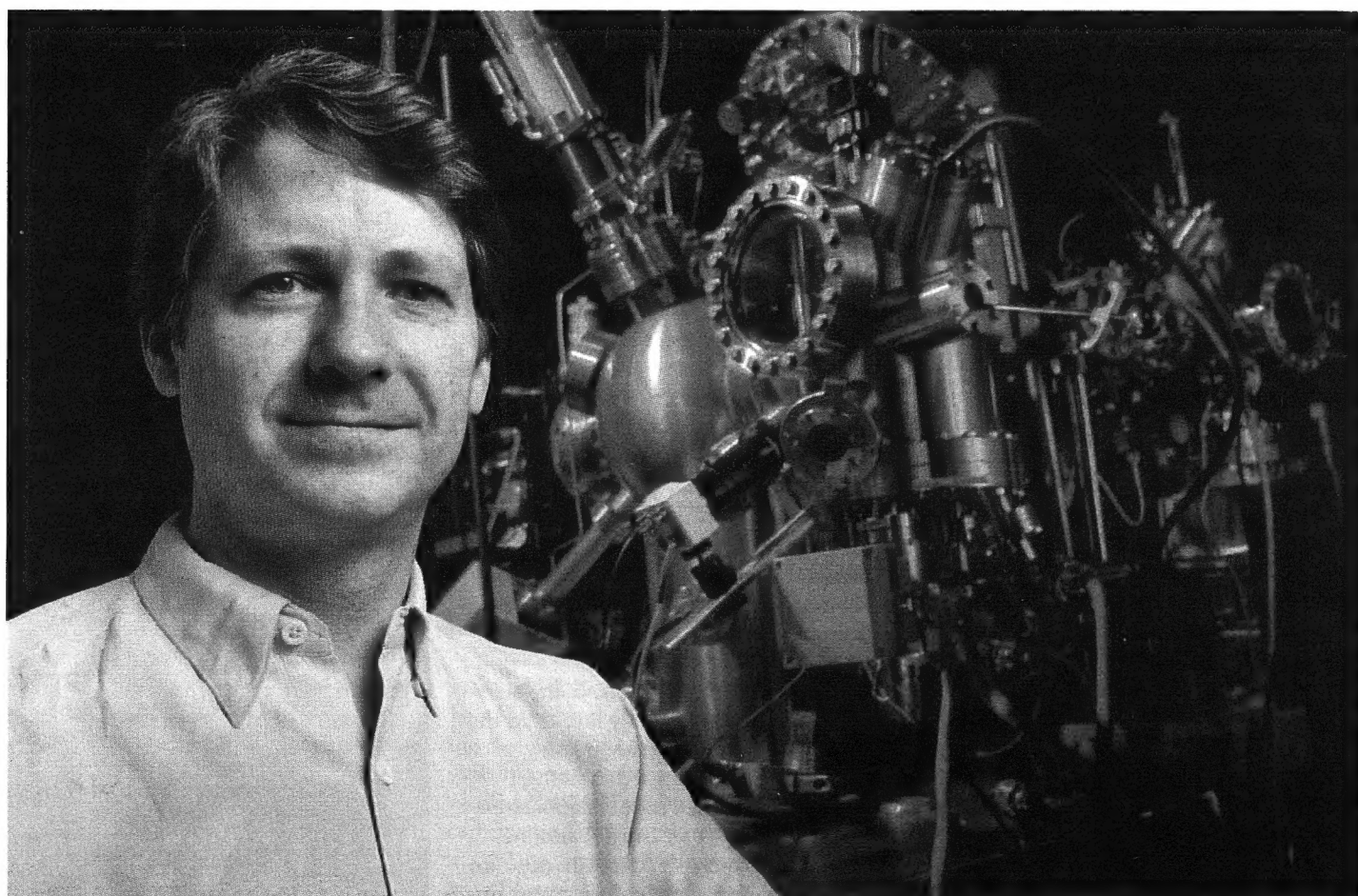
Wolkow said his team has proven that a single molecule can be controllably charged while all the surrounding molecules remain neutral, causing it to act as a basic transistor. Transistors control the flow of current in most electronic devices and are combined to form integrated circuits used to make the microprocessors and memory chips that drive everything from computers and cell phones to household appliances.

But where conventional transistors might use a million electrons to switch a current, Wolkow's team was able to control the current through a hydrocarbon molecule using a single atom.

Wolkow emphasized that, while the concept his team tested is a long way from practical application, it undoubtedly fits the definition of a transistor, which has three terminals - an 'in,' and 'out,' and a control outlet.

"To call something a transistor, it needs a control element," Wolkow said. "We have control, but it's very sluggish and slow right now. It takes us on the order of minutes to change conditions that make current go or not, so for any computer technology, this thing is today impractical. But it's not hopeless. There are many hurdles, but there aren't any we see as insurmountable."

In fact, the research team has already cleared what appeared to be insurmountable obstacles in manipulating molecules measuring one one-billionth



U of A physics professor Dr. Robert Wolkow, head of NINT's Molecular Scale Development Group.

of a metre in size.

"It's very hard to connect wires to a molecule," Wolkow said. "Imagine trying to bring three watermelons together all to touch something the size of a poppy seed. You couldn't do it - you could make two watermelons touch a poppy seed, and even that would be kind of difficult, holding that poppy seed in place. But then to bring in the third watermelon is impossible - you can't have all three touching such a small object."

To solve this problem, the "transistor" molecule was placed on a silicon surface that had been exposed to hydrogen gas, so that each silicon atom was capped with a hydrogen atom. By removing the hydrogen cap from single silicon atom, that

silicon atom could be made to conduct a charge while the surrounding atoms remained neutral. The tip of a powerful scanning tunneling microscope served as the on/off switch.

Practical nanoscale transistors may be decades away, Wolkow said, but the potential to create smaller, faster, more efficient electronic devices with minimal energy and material requirements is a powerful incentive to pursue this line of research. But, he added, the challenges are considerable.

"We need to make such an entity work without the need for a million-dollar scanning tunneling microscope hovering over each molecule. We'd like to get these things down to where they cost pennies.

It's an engineering feat to put the right structures in place. We need to make a solid-state structure that provides that other contact which was provided by the probe of our scanning microscope."

Wolkow said the lead author of the study, U of A postdoctoral fellow Dr. Paul Piva, deserves special mention for championing the research and mustering the expertise of his collaborators to design the concept and test it "in every way imaginable." Funding for the research was provided by iCORE, the National Research Council, Science and Engineering Research Canada (NSERC), the Canada Foundation for Innovation, the U of A and the Canadian Institute for Advanced Research. ■



# Nanotechnology researcher earns national medal

**Dr. Jillian Buriak second woman awarded Royal Society of Canada Rutherford Memorial Medal in Chemistry**

By Iris Tse

Dr. Jillian Buriak, a professor and Canada Research Chair of Inorganic and Nanoscale Materials in the Department of Chemistry, and senior research officer at the National Research Council's National Institute for Nanotechnology, is this year's recipient of the Royal Society of Canada Rutherford Memorial Medal in Chemistry.

The award is named for Lord Rutherford of Nelson in memory of his contribution to nuclear research, and is considered the most prestigious award for Canadian chemists. Preference is given to candidates under the age of 40 in recognition of Lord Rutherford's research at a relatively young age.

The Rutherford Medal is awarded in recognition of Buriak's research in organometallic and inorganic chemistry on silicon surfaces. Her research group also works

"This is a very prestigious award and is only the second Rutherford Medal ever given out to a U of A researcher."

— Dr. Liang Li

to demonstrate the potential of nanoscale structures that have a myriad of potential applications. Buriak is the second woman in the 25-year history of the award to receive such an honour.

Buriak said the award comes as a complete surprise.

"This is very unexpected for me. I know I was nominated, but I didn't expect to win," said Buriak. "This is a very old award and the award recipient list is filled with distinguished names. It is a shock to be listed next to them."

Dr. Martin Cowie, chair of the Department of Chemistry, is equally excited about Buriak's award.

"This is a very prestigious award and is only the second Rutherford Medal ever given out to a U of A researcher. It is very difficult award to win," said Cowie. Dr. Liang Li was the U of A's first Rutherford Medal recipient in 2003.

Despite her modesty, Buriak, a leader in semiconductor surface chemistry, is no stranger to national recognition, as she has been the recipient of numerous academic and professional awards. She was recently chosen to attend the 2005 Forum of Young Global Leaders. In addition, she was also named one of Canada's Top 40 Under 40 in 2004. Canada's Top 40 Under 40 is a national program founded and managed by The Caldwell Partners, an executive search firm, to honour Canadians who have reached a significant level of success but have not yet reached the age of 40.

Buriak hopes that winning the Rutherford Medal will offer her some breathing room and give her a chance to reorganize her hectic research schedule.

"It will give us some time, now that



Dr. Jillian Buriak has been awarded the prestigious Rutherford Medal.

I'm not under the pressure of putting out a paper in the next few months. It allows me to consider new areas and we can step back and look at the bigger picture," said Buriak.

Buriak also appreciates the increased visibility that accompanies the award. She looks forward to the prospect of collaborating with others in her field.

"I hope this gives me the opportunity

to set up some sort of collaboration in the future. I haven't done a lot of collaboration in the past since I have been concentrating on the hard science aspect of my research. However, perhaps with this award, people would have heard of me and would like to collaborate on some projects with me."

Buriak will receive her medal next November at the annual Royal Society of Canada Banquet in Ottawa. ■

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## Travel award honouring U of A president to be matched with government funds

**All students should be able to travel, says Dr. Rod Fraser**

By Caitlin Crawshaw

As a 20-year-old University of Alberta student, Dr. Rod Fraser had the chance to travel to Israel for seven weeks – an experience that forever altered how he understood Middle Eastern politics.

"I look back on that as one of the absolute critical milestones in my life," said the University of Alberta president.

"I'd say the most important thing I learned is the complex set of relationships amongst the peoples of Israel, Palestine, Jordan and Lebanon – extraordinarily complex relations, and even more complex history that spans over 6,000 years."

Fraser, who completed his PhD at the London School of Economics, believes in the power of international education, and says it's long been his hope to make travel accessible to each and every U of A student.

"I think it's been one of the most challenging things for us to advance on – to set up a special support system to help students manage the costs associated with traveling abroad," he said.

Now, a new scholarship in his name promises to make his dream a reality. A \$1 million endowment will establish The Rod and Judith Fraser International Undergraduate Learning Award. And what's more, at a tribute dinner held in honour of Fraser's retirement from the U of A Presidency, the Government of Alberta



Dr. Rod Fraser.

has promised to match those funds to create a \$2 million endowment.

This is exciting news for Fraser.

"For me, it's about the highest priority item I would have of our need to further enrich the international vibrancy of our

"For me, it's about the highest priority item I would have of our need to further enrich the international vibrancy of our community – for each student to have that significant international experience,"

— Dr. Rod Fraser

community – for each student to have that significant international experience," he said.

Dave Hancock, Minister of Advanced Education, said that the matching funds will come from the Government of Alberta's new Access to the Future Fund.

"One of the Alberta government's priorities under its 20-year strategic plan is to ensure Alberta can compete in the global marketplace," said Hancock. "To do that, Albertans need to have relationships around the globe, and need to have a solid understanding and appreciation of other cultures. This new U of A scholarship will do that."

Fraser's work at the U of A was also recognized by Mayor Stephen Mandel, who proclaimed June 2 "Dr. Roderick Fraser Day." ■





Alberta students get a break on tuition fees this year, while the province develops a new policy on tuition.

# Postsecondary funding 101

*Pondering the future of tuition and what it might mean for the U of A community*

By Lee Craig

No one can say for sure what will be decided by the provincial government's upcoming tuition policy review, but University of Alberta administration, faculty, and students are scrupulously pondering the future of postsecondary funding.

Even after recent funding increases to the university, many figure that future tuition increases are likely, and some are arguing that fee hikes are a necessary evil to protect the quality of teaching and learning here on campus.

According to Philip Stack, the director of resource planning at the U of A, capping tuition is not in anyone's best interest.

"Fundamentally, I think it is poor policy to go to some type of tuition cap or tuition freeze, because ultimately it hinders the institution in terms of ensuring it can maintain the quality of the learning experience," said Stack.

"Eventually, it catches up, and then the cap will be removed and you're in this substantial make-up stage or where you're trying to recover from those years in which you couldn't increase tuition."

U of A Provost and Vice-President (Academic) Dr. Carl Amrhein says future tuition policy should make financial assistance available for those who need it rather than keeping tuition low for everyone.

"I think the government should set its tuition policy in a framework that allows universities to progress in their ability to improve quality as well as increase access, and then to spend a lot of money to target financial aid for those who have to travel from remote places to attend university, who are single parents, or whose family cannot help out."

Amrhein says tuition policy review could look to other jurisdictions in the world for ideas, such as Australia where people pay a slightly higher income tax in return for a university education or some parts of the United States where government pays the interest on the student loan as long as the student is in school.

One idea Amrhein has is to calculate the tuition cost for the full course of study in a program, and to give a student a refund if she or he finishes early by taking summer courses.

"Let's say you finish a four-year program in three years, government gives you a check for one year of tuition."

Amrhein said this approach could be particularly helpful in Alberta, which is trying to rapidly expand postsecondary education, because it helps the university use its facilities more intensively, which makes spaces for more students.

Minister of Advanced Education Dave Hancock hesitated to predict whether tuition will inevitably rise, but maintains

that tuition is only part of a package of concerns surrounding postsecondary affordability.

"As we undertake our review of the entire postsecondary system, I'm committed to examining the whole issue of affordability very closely," he said.

"Yes, tuition is part of that. But we'll also look at all factors affecting the cost of postsecondary education. I can't predict what the results of our review will be, but the cost of postsecondary education will continue to be a shared responsibility among students, their parents, institutions, and the government."

Hancock added that government and universities need to look at other costs such as the cost of textbooks and other issues such as scholarships, student loans, and accessibility for students in remote and rural areas.

Of course, in the upcoming fall term, the Alberta Centennial Tuition Rebate means that postsecondary students won't face a higher tuition. Had this temporary freeze not been implemented, students at the U of A would have been paying up to an additional \$282 in tuition for 2005/2006. Instead, the government will distribute compensating funds directly to universities and colleges in place of tuition increases.

"Students enrolled in any program where the government regulates the tuition will benefit from the rebate. This includes apprenticeship programs," he added.

Graham Lettner, president of the Students' Union, says the increasing need for a university-educated populace in Alberta means that government should consider eliminating tuition all together, although he knows it is unlikely.

"About 100 years ago they decided to make primary education free and government paid for it. That was in response to the demands made on the population to increase their knowledge base. We might evolve from that even further," said Lettner. "Before you know it, with the knowledge economy and the increased need for intelligent and capable young people, we might just see tuition entirely dropped."

Lettner pointed to Ireland as an example of a country where the direct cost of tuition is paid for by the government, but he added, "If we had really seen a particular country or province make it work perfectly, we'd probably all be doing that."

A more immediate issue, according to Lettner – one that he hopes the tuition policy review committee considers – is the need for scholarships for continuing students, not only entrance scholarships.

"The proportion of awards for first-year students compared to continuing students is probably 10 to one, if not more.

There's a lot of these 'attracting' scholarships, and not a whole lot continuing. But, need doesn't end after you get into university."

The university has two major sources of unrestricted revenue to fund its operating budget: the provincial operating grant and tuition fees. Tuition fees have been rising consistently since major reductions in provincial funding for postsecondary education started in 1993. In 1991/1992 provincial grants covered about 82 per cent of the university's revenue for its operating budget, and tuition made up about 13 per cent. This year, the provincial grant provides about 65 per cent and tuition provides just over 24 per cent.

Phyllis Clark, vice-president (finance and administration), said that before the six-per-cent annual increase (over three years) in base operating grants was announced, the university budget was based on a maximum tuition increase of 5.7 per cent for the next year (which the government will be paying through the rebate). But despite the increase to the operating fund, Clark said she sees more tuition increases, such as this one, in the future.

"We have to see what (the new) tuition policy says to know what the choices are going to be, but we are still going to need to ensure that we get as much money as we can to maintain the quality of the institution and that means we will be asking for the maximum tuition allowed under the new policy," she said.

Clark added that current financial pressures and future needs must be balanced. This includes the first priority of eliminating the cuts and ensuring the operating deficit doesn't increase, addressing underfunded graduate students, investing in campus buildings, and many others.

A large portion of the operating budget, she added, is also obviously concerned with funding for staff and ensuring the university maintains the highest quality of education.

"Generally, what everybody has been talking about here is the gap between what the university should be getting to run the institution as a high-quality, indisputably recognized institution and what we are getting from the provincial government," said Clark. "Our government grants weren't even keeping track with our salary settlements for our academic and non-academic staff. So, we were getting a continuous gap in terms of operating funding, just to keep the university running."

Under the current Alberta tuition policy, postsecondary institutions can make up to a maximum limit of 30 per cent of net operating costs from tuition fees. Using numerous formulas and depending on

how the Consumer Price Index (CPI) has changed from year to year, the government can tell an institution how much the maximum tuition increase can be adjusted. If a university or college is over the 30 per cent cap, it can increase tuition by two per cent plus the CPI.

If this maximum amount was changed, the operating budget of the U of A and other universities and colleges could be significantly affected. But whether this situation changes won't be known until the tuition policy review is completed.

"I guess what I am hoping for is that the government, first of all, invests even more into us, but also that the tuition policy is a reasonable policy, so there is a fair share for students to pay for their education, as well as for the government to pay a fair share," said Clark.

Stack anticipates that there may be a change in the policy.

"We expect there to be some move away from the current (tuition) policy in place, in particular, the annual percentage increase," said Stack.

He pointed to models that other jurisdictions or provinces have adopted in terms of tuition policy: an absolute freeze on tuition; tying tuition increases to the Consumer Price Index; completely deregulating fees, which has been done in some professional programs; allowing institutions a fairly high degree of flexibility in terms of determining tuition, with some bursary and scholarship programs to offset those tuition cost increases (which is done at universities such as Yale and Harvard); or finally, some mixture of the preceding models.

Stack notes that the funding will help tremendously, but he adds that it only fills a revenue gap.

"We had identified a \$48.7 million revenue gap. With the announcement so far, it would fill about \$45.5 million of that revenue gap," he said, adding that other future announcements may further close that gap.

But expectations for the university in the future economy suggest that more funds may be needed. He added that if the government comes forward with a different tuition policy that reduces the degree to which the U of A can increase tuition, the university will end up with another revenue gap.

"Ultimately, the quality of the university experience comes down to professors in the classroom and the number of fully qualified, tenured professors. The more professors that we have, the better ratio we have in terms of faculty to students, the more sections we can offer, the better selection, and the better opportunities for students," he said. ■



## The joy of running

*Doug Hube laces up to compete internationally, at home*

By Tom Murray

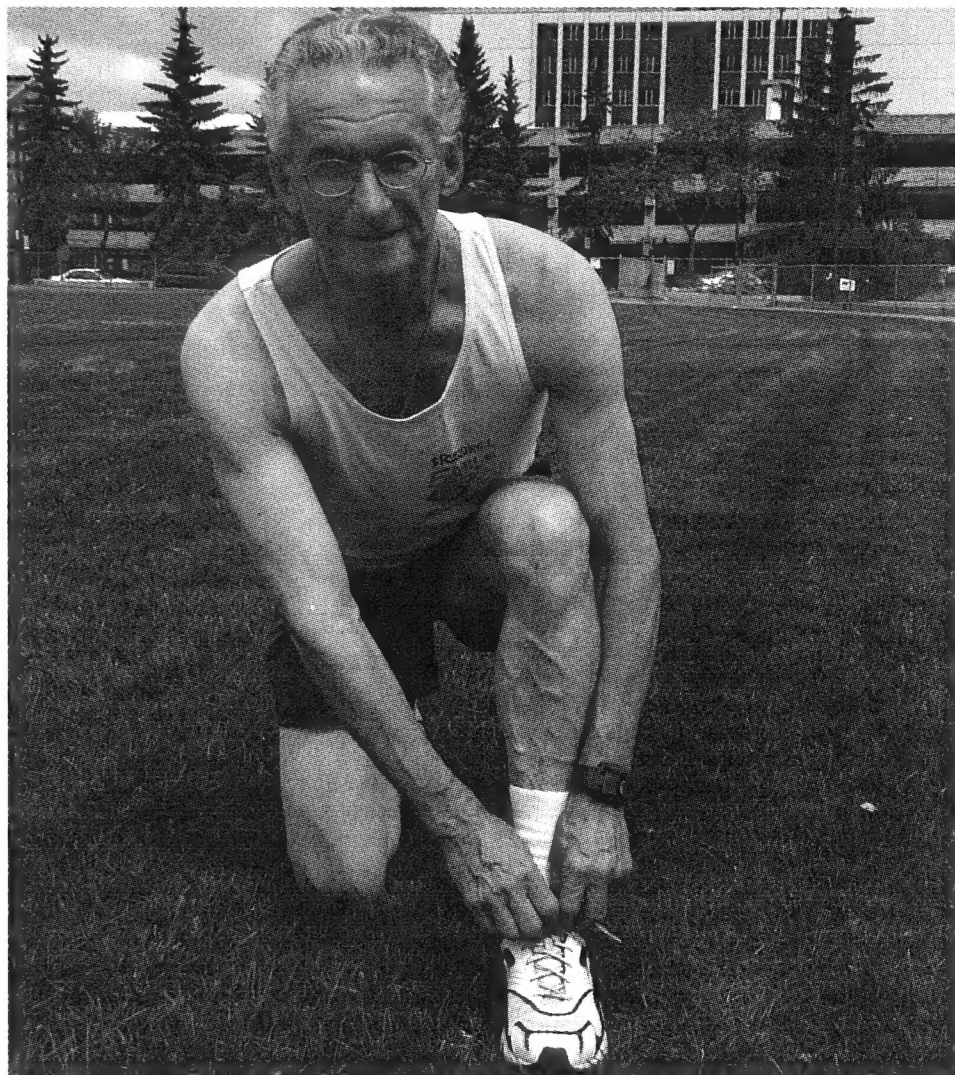
With only six weeks left to prepare, University of Alberta astronomer Dr. Doug Hube, a professor emeritus in the U of A Department of Physics, is training hard to compete in the upcoming World Masters Games. The current president of the Royal Astronomical Society of Canada and devoted long-distance runner will be competing in the 10-km half marathon on July 31.

"I guess I spend a bit more time at it than some people do, trying to preserve one's youth, I suppose," Hube jokingly acknowledges, just before his usual campus workout. "Really, I'm still a casual runner, but I've been running for a long time and I really enjoy it, especially when it's done with other people. Running is in many respects a social activity as well as a physical activity. You meet other people and forget about everything else, and you chat about common interests and share good experiences."

It's clear that Hube resists the notion of running as strictly a solitary pursuit, especially since he participated in the now-defunct Jasper to Banff Relay Race more than a dozen times. "There it's very much a team event," he explained. "That kind of running has a special appeal to it also. So really, it's something that you can do anytime you want, day or night, or as part of a team."

The notion of setting personal fitness goals rather than viewing running as strictly competition seems to suit the professor's self-effacing personality.

"I started it just because I realized I wasn't doing enough physical activity to feel healthy," he said simply. "Plus, I had talked to a number of people who were running on campus, people I thought that



Dr. Doug Hube is competing in the World Masters Games in July.

didn't look like runners, and I thought 'If they can do it, so can I.' "

Thus was born another dedicated campus runner. He's picked up a few friendships along the way with other amateur

campus athletes, but he's mostly stuck close to home when entering competitions. While he's participated in a few local and provincial events, the only organized running Hube has done outside of Canada

was at the Boston Marathon in 1995.

"That was a different life, I'll tell you," he said. "I haven't done a marathon since 1996, but it was a sort of analogous to the Masters Games in that there was sort of no hope of winning anything. There was hope of setting a personal best time, but overall it was more the experience of doing something with a large number of people. It was a very memorable event to be involved in, as will be these World Masters Games."

The Games seem to fit rather nicely into Hube's philosophy of physical fitness, as it allows amateur athletes of different age groups and varying skill levels to participate. First held in Toronto in 1985, the World Masters Games have since rotated through Denmark, Brisbane and Portland, with close to 25,000 athletes participating in the 2002 Games in Melbourne, Australia. Hube is just one of many university staff and faculty to participate or volunteer in the Games, and the U of A is hosting many of the events at its own facilities, as part of the province's centennial celebrations. The Games run between July 22 – 31, with Hube's half marathon one of the final events.

"The World Masters will grow," said Hube. "In the Boston Marathon there's a basic qualifying time, but there isn't at the World Masters, so anybody who wants to can enter in virtually any sport. It's for anybody who loves physical activity, or joining with other people in a social situation. Granted, the Masters doesn't have the glory aspect of something like the Boston Marathon, but it does give one a sense of accomplishment."

For more information on competing or volunteering for the World Masters Games visit <http://www.2005worldmasters.com/> . ■

## University peregrine dramas now captured on camera

*The shenanigans of the U of A's falcon family are now being broadcast on the Internet*

By Caitlin Crawshaw

The high-flying antics of peregrine falcons roosting on the Clinical Sciences Building are now being captured on camera.

Installed at the beginning of April by the University of Alberta's Facilities Management department, the cameras capture the goings-on of the U of A falcon family. The cameras, one inside the nest and one directed at the nest from another building, are linked to a website and allow the community to watch the duo and their three incubating eggs around the clock on the Internet.

"I think the cameras are valuable in that they will raise awareness to campus and the Edmonton community about the peregrines," said Geoff Hurly, associate director of operations and energy management.

In addition to the community's use of the cameras, Alberta Fish and Wildlife will be able to study the threatened species. While peregrines are no longer on the endangered species list, they're still making a comeback after nearly becoming extinct several decades ago when the pesticide DDT weakened the egg shells of the birds, decreasing reproduction rates dramatically.

The management of the U of A falcon nest is a team effort that has called on the talents of Facilities Management, Alberta Fish and Wildlife, U of A renewable resources graduate and falconer Dr. Alastair Franke, and the Environmental Co-ordination Office of Students (ECOS).

ECOS has managed the fundraising for the camera and related equipment, which has cost about \$6,000 to date.

Like last year's pair, the peregrines currently in the U of A nest box have ruffled their fair share of feathers. Earlier this season, the female in the nest had several run-ins with other females over coveted territory. It began with a tussle with a female on Saskatchewan Drive, in which she ran into a window.

"She was in bad shape," said Gordon Court, a biologist with Alberta Fish and Wildlife who has been studying the nest for several years. "It took about a week to get her head straight."

Fortunately for her, Franke was soon on the scene to nurse the injured bird back to health, attaching a radio collar on her in the meantime to track her movements via satellite. But not long after her brush with death she was duking it out again – this time, with a bit more success.

"She was such a scrappy bird that she managed to reclaim the Clinical Sciences Building from another bird," Court said.

The nest is now inhabited by the cantankerous female and a four-year-old male who joined the nest last year. He is the son of one of two female peregrines who nested together two years ago – a rare occurrence in the peregrine world. One of those females perished during a territory dispute with a downtown female last May, in which she was run into a window and killed.



Peregrine falcons at the U of A can now be observed on the net, as well as in the sky.

According to the ECOS director Preshani Maistry, ECOS is still raising funds to cover the costs of installing and maintaining the cameras.

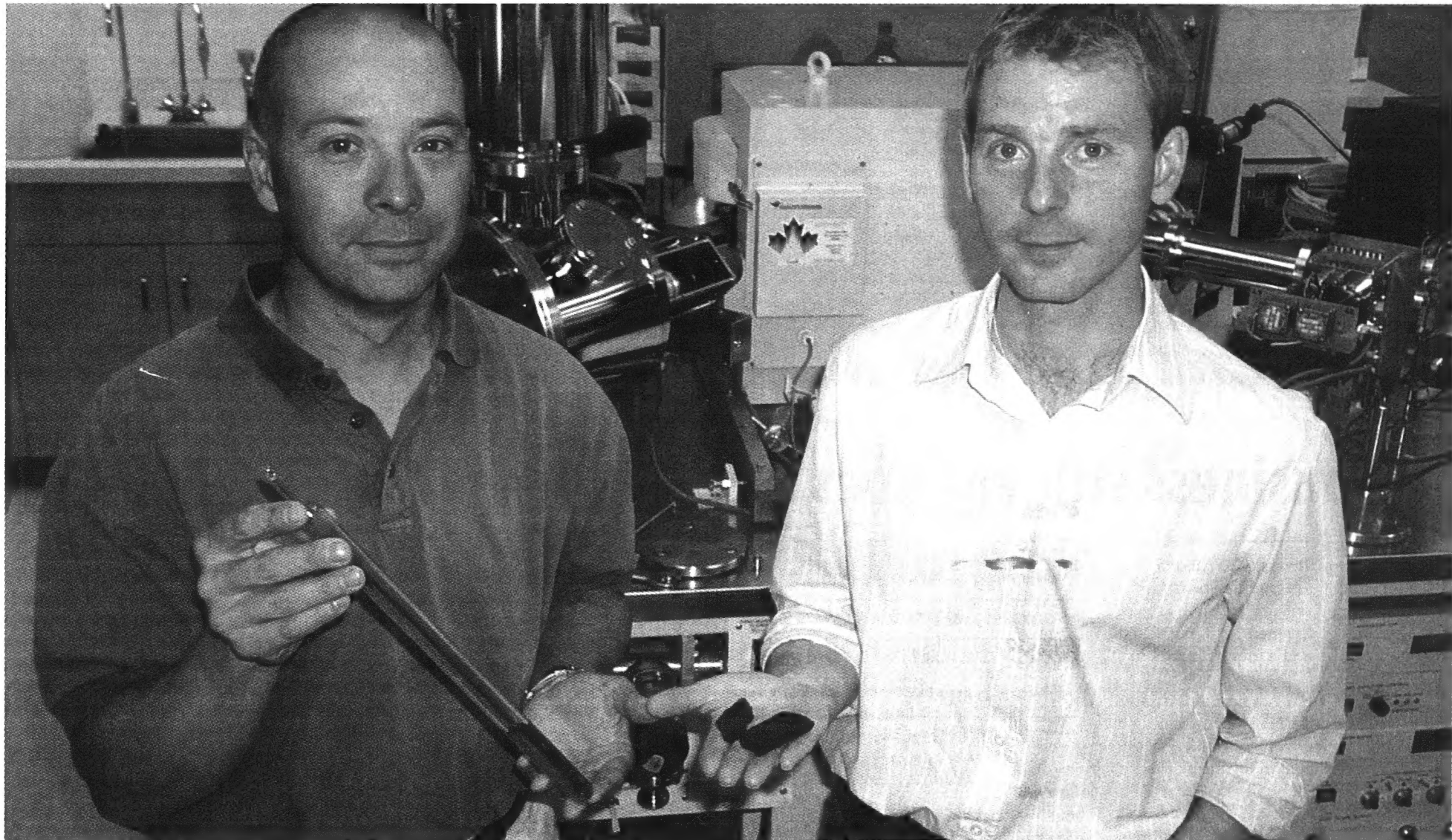
"We're thinking of adding a voice recorder above the nest as well," said Maistry.

Over the summer months viewers can expect to see the eggs hatch within a little

over a month of being laid, after which the chicks will remain in the nest for up to 40 days, said Court. By August the chicks will be hunting for themselves, and by mid-September, the brood will have flown the coop.

"The cameras give people an opportunity for quite an intimate view of a threatened species," said Court. ■





Robert Creaser and David Selby have solved a geological quandry.

# From rocks to oil

*Researchers become the first in the world to determine the age of oil*

By Caitlin Crawshaw

University of Alberta geologists have become the first in the world to find a means of accurately determining the age of oil, providing critical information about its formation which will ultimately aid in a better understanding of oil deposits.

Dr. David Selby and Dr. Robert Creaser published a paper in the highly-regarded journal *Science*, which states that the giant oil sand deposits in Alberta formed 112 million years ago – not 60 million years ago, as previously thought.

The isotope geochemists have used the isotopes of two elements found in trace amounts in oil – rhenium and osmium – to accurately pinpoint when oil formed in the Western Canada sedimentary basin, which contains much of the world’s oil sands.

“This is the first time that anyone has ever directly determined an age from oil,”

explained Creaser, who heads up the U of A’s Radiogenic Isotope Facility and is funded by a discovery grant from Science and Engineering Research Canada (NSERC).

“Previously, the time at which oil was produced from a rock and migrated as a fluid could be deduced from looking at the geologic relationships, looking at the over-all history of that sedimentary basin and things like that. But this is the first time there’s actually been a direct determination using any isotopic method to try to figure out how old it is.”

Isotopes, versions of elements with different atomic masses, can be used to determine the age of substances. The isotopic method used by Selby and Creaser, for instance, is comparable to carbon-dating, in which the rate of decay of a carbon isotope is used to determine the age of

organic matter. Using a mass spectrometer, which analyzes the molecular composition of a sample, the researchers spent nearly an entire year examining rhenium and osmium isotopes in large volumes of oil – a meticulous process, says Creaser.

Both researchers emphasized that the research findings will change the way geologists understand the evolution of the basin, which runs from Fort McMurray and surrounding area through to Peace River. But while the discovery has drawn much media attention, the researchers stress that the discovery will not immediately help geologists find new sources of oil.

“It’s probably not going to help anyone tomorrow find more oil,” said Creaser.

Selby, the paper’s lead author, emphasized that the finding answers one question, but that many others remain.

“It’s part of the puzzle. We need to study the sedimentary basins in detail from a lot of different angles. But this is one angle that we’ve never been able to assess before, and now we can – so, it’s a pretty big step forward in that regard,” said Selby, an Alberta Ingenuity Fund Postdoctoral Fellow, who is funded also by the American Chemical Society.

“Until now, understanding when oil was formed was all relative, which is why it was a debate with the tar sands – did it happen 60 million years ago, did it happen 100 million years ago? And that’s a 40-million-year difference, which is a huge amount of time. So with this method, we get an absolute number and that helps resolve some of the questions, and [geologists] can take this information and re-evaluate what they already know.” ■

# Geology rocks for U of A researchers

*Different paths brought David Selby and Robert Creaser to the world of geology*

By Caitlin Crawshaw

During his formative years, Dr. Robert Creaser was often recruited by his geologist siblings to help with their thesis work, measuring the diameters of pebbles or doing other “grunt labour.”

“Geology was always in my house when I was growing up,” said Creaser. “From the time I was about 10, I was exposed all through my teenage years to siblings doing geology degrees.”

When Creaser left high school he wasn’t completely decided on geology, but decided to find out more about it. As he continued with his education at Australia National University (ANU) in Canberra, Australia, Creaser became hooked. Following on the heels of his older sister and brother who both earned masters degrees in geology, Creaser ultimately pursued a career in geology research.

“I guess it kind of went down the

“Having a good passion for what you do, but also having a good imagination and being able to think about beyond our traditional training really allows you to come up with some novel applications,”

— Dr. Robert Creaser

line,” he explained. “Geology seems to run in some families. It probably does in other disciplines too; I think it’s probably not unique.”

In fact, Creaser’s parents were also captivated by science. His mother worked as a lab assistant in high schools, and his father is a retired microbiologist/biochemist who conducted research at ANU. The position was the reason for his family’s move from

England to Australia when Creaser was young.

Creaser’s research partner, Dr. David Selby, took a bit of a different route to geology.

“Geology doesn’t run in my family at all,” laughed the England-born geologist, who obtained his PhD at the U of A after earning his Bsc at Southampton University. For Selby, it was the beauty of the natural world that acted as a stepping stone to his life’s work.

“I sort of spent a lot of time as a kid being outdoors, and the holidays were always in the mountains – or what we call mountains in Britain,” said Selby.

As a child he was fascinated by how mountains and volcanoes formed, and enjoyed learning about rivers and other features of the landscape. When he entered university, Selby enrolled in physical geography because of his fascination with phys-

ical landforms, and eventually moved over to geology.

Selby came to the U of A in 1994 to start his PhD under Dr. Bruce Nesbitt, but finished his PhD with Creaser after Nesbitt passed away. The two have worked together since 1998. Creaser has been at the U of A for the last 12 years.

While the two researchers came to geology through very different paths, they both agree that success in research requires great dedication.

“You have to be interested in what you do. If you’re not interested, you’re not going to follow it through from start to end,” Selby said.

“Having a good passion for what you do, but also having a good imagination and being able to think about beyond your traditional training really allows you to come up with some novel applications,” added Creaser. ■





## Top business student goes from Marines to law school

By Iris Tse

This year's top University of Alberta School of Business graduate boasts a résumé crammed with experiences as varied as student government, extracurricular campus activities and a four-year stint in the U.S. Marines.

Benjamin Aberant, an Edmonton native and a graduate of McNally Composite High School, is the winner of this year's Dr. Hu Harries Medal in Business. The award is awarded annually to students graduating from the School of Business with the highest academic standing in the final two years of the BCom program.

Aberant said that the award is a great honour and remained modest about his accomplishments.

"I felt really honoured since the Faculty of Business has many really top students in it. It was never my goal to win an award. I just studied as hard as I could. But I did always want to get the best mark that I could. I was humbled when I found out about the award," said Aberant.

Instead of going straight into university or taking a year off to backpack through Europe, Aberant opted to follow his childhood dreams of military service. During his service as an infantryman for four years with the United States Marine Corps, he was stationed in Japan, Korea and Australia while earning various military awards.

"The Marines just provided me with the challenge that I wanted at the time. The movies over-dramatize things a bit; it wasn't like in the movies. But it is still pretty intense," said Aberant.

"It's an experience that's completely different than university. I think it's about building up life experience. This experience probably helped me succeed in university because it helped me develop the necessary skills and I think this will continue to benefit me in many aspects of life."

"It was never my goal to win an award. I just stud-

ied as hard as I could. But I did always want to get

the best mark that I could. I was humbled when I

found out about the award."

— Benjamin Aberant

Aberant has seemingly mastered the art of juggling school work and a healthy social life with copious amounts of extracurricular activities. He actively participates in a variety of campus organizations that range from the Undergraduate Business Games Team and Business and Beyond Toastmasters Club to Safewalk and the Discipline, Interpretation, and Enforcement Board of the Students' Union. In addition, he was also a teaching assistant for a business class last year.

For his present and future success, Aberant credits his father for his wisdom and strong guidance.

"I'm really grateful for his presence – he really helped me a lot in life," said Aberant.

Aberant is working as a labourer with Suncor for the summer, then he will be attending York University's Osgoode Hall Law School this September. He was awarded the Osgoode Centennial Entrance Scholarship for Alberta, an award given annually to one student from Alberta based on academic excellence and aptitude for legal studies. Aberant is still undecided as to which stream of law that he would like to go into.

"At this point, I'm most interested in criminal law. But it's most likely to change since I have yet to know what law school is going to be like. I like to compete and I don't like to be bored. I think this is a career path that will never be boring," said Aberant. ■



Benjamin Aberant has won the Dr. Hu Harries Medal in business.

## Augustana students celebrate the future

By Zanne Cameron

For the first time in its history, the U of A's Augustana Faculty graduated students from two institutions simultaneously.

Of the 165 students who graduated from Augustana on May 29, 92 received Augustana University College degrees and 73 graduated with U of A degrees.

This was a first for the institution, which became a U of A faculty after officially joining the U of A last year.

University of Alberta President Rod Fraser was present at the celebrations and had some sage advice for Augustana's class of 2005.

"Dare to do mighty things," he urged a rapt audience.

Convocation day began with a service dedicated to the graduating class and celebrated with choral music arranged and led by Campus Ministry Music Director Brendan Lord. After the convocation ceremonies, students and faculty gathered for a traditional tree planting. Nineteen trees line the beautiful campus boulevard, rep-

resenting each graduating class since the school became a degree-granting institution in 1985.

The twentieth tree now stands to symbolize the class that represents this historic year in Augustana's 95-year-old story. The students will now carry on with their own stories as they write their futures and dare to be among those 'in the arena.'

One of these students has already risen to that arena in many respects. Joel Purkei came to Augustana from Kenya three years ago and graduates with a three-year Augustana University College Bachelor of Arts, with a double concentration in interdisciplinary studies and political science. While at Augustana, Purkei was a champion athlete. In fact, came out for a cross-country practice early in his first year and wound up a core member of Augustana's two-time national champion cross-country running team, though he hadn't been a competitive runner prior to coming to Augustana.

"It's the personal touch that I think really makes

Augustana an outstanding institution. And not only

that, but Augustana offers so many different

opportunities for students to learn by experience."

— Jessica Bulger

"I have never seen a runner improve as much as Joel did," said coach and professor of mathematics, Dr. Gerhard Lotz.

Purkei admits that getting up to run in -20C or worse was a challenge for someone and a force for positive change in Kenya.

"I will always carry Augustana in my heart," said Purkei. He hopes to be a leader and a force for positive change in Kenya when he returns, but like most young people, he is in no rush to get home. Currently he is working to save up money for the next chapter of his life: "I want to become a pilot," he explained.

Jessica Bulger, of Hinton AB, gradu-

ated with a four-year music degree, but chose to extend her stay for an extra year in order to participate in Augustana's Rural Development Exchange program in Mexico.

"In that particular exchange, the world's your textbook," she said.

Bulger originally intended to transfer from Augustana after two years, but like many, found the small campus experience, plus the opportunity to participate in programs like the Rural Development Exchange, a powerful combination.

An active volunteer with campus ministry during her time at Augustana, Bulger feels that an invitation is extended to all Augustana students with a sense of adventure.

"It's the personal touch that I think really makes Augustana an outstanding institution. And not only that, but Augustana offers so many different opportunities for students to learn by experience," she said. ■

## PhD student beats out Canadian competition to earn national education prize

By Iris Tse

A graduating University of Alberta international student has won a national award for the best doctoral thesis in international education.

Education student Edward Shizha, whose doctoral thesis is entitled *Indigenous Knowledge and Languages in the Teaching and Learning of Science: a Focus on a Rural Primary School in Zimbabwe*, beat out competitors from McGill University, the University of Toronto, and other Canadian universities to capture the Michel Laferriere Award from the Comparative and International Education Society of Canada. The award recognizes outstanding research in the field of comparative and international education. Judging criteria include conceptualization, design and execution, as well as the quality of the written report.

For his thesis, Shizha observed how pri-

mary school teachers in Zimbabwe reconcile western scientific knowledge with local indigenous knowledge. What he found was that these two were often treated unequally; indigenous knowledge is deemed "traditional" and "backwards," while western science is revered as "veritably absolute."

Shizha said that the idea of his thesis grew out of his experiences as a teacher in Zimbabwe.

"I have been teaching in Zimbabwe since 1980. When I was teaching in primary school I found that students sometimes had a problem making connections between what they do at home and what they learn in the classroom. There is a distinct gap between local, indigenous knowledge and school science, which is defined as western science," said Shizha.

Aside from the unequal weight of importance given to western knowledge,

Shizha also observed a cultural gap between home language and the language of science instruction at school.

"Students have trouble expressing themselves in the classroom because of the language barrier. Due to the education policy, English is used as the medium of instruction. But they also speak Shona and Sindabele at home and are more familiar with that. This makes them hesitant to participate in class discussions," said Shizha.

Shizha suggests that a solution to these problems is to incorporate both English and the indigenous language into teaching. In that case, the teachers can sometimes move away from English to help students better understand what they are learning.

Although it seems surprising that a Zimbabwe native would pick Edmonton, a place that is notorious for its bone-chilling winter, it was actually an easy decision for

Shizha to come here.

"I have a friend who was studying in this university, he was taking a masters program here, and he had a very positive impression of the Canadian education system. At the same time, I was looking for a university to do my PhD, so he advised me to come to the U of A," said Shizha.

Shizha said he felt exhilarated and honoured upon learning that he won the award. But aside from highlighting his personal achievement, Shizha said he appreciates this opportunity to draw some positive attention to his native country, Zimbabwe.

"Some people think of Zimbabwe as a backward country and they often focus on the negatives, such as AIDS, drought, and the conflict happening there. Not much has been focused on the positives. So maybe this is a way to highlight that something positive can come out of Africa," Shizha said proudly. ■

## High school friends share top honours at convocation

By Iris Tse

Two University of Alberta students are proving that a little friendly competition never hurt anybody – in fact, it may have won them the top academic honours of their graduating class.

Old Scona Academic High School graduates Stefanie Schienmann and Christina Sawchuk were outstanding students in high school, and continued to achieve at the U of A. Both are receiving the Governor General's Silver Medals this year, for achieving the highest academic standing overall upon the graduation of their undergraduate degree.

Schienmann, the valedictorian of her high school class, said she felt honoured and surprised when she learned of her awards.

"I was really surprised. I didn't even know this award existed until about a week ago and I hadn't thought of winning a big award like that," said Schienmann.

Schienmann, will be graduating with a Bachelor of Science with honours in molecular genetics. She has been working in the laboratories of Dr. John Locke and Dr. Tracy Raivio for the past two summers and will continue her studies at the University of Calgary come this Fall.

Aside from her studies, Schienmann is also finishing her Piano Teacher's Diploma from the Royal Conservatory of Toronto. She spends most of her free time teaching students and enjoys the opportunity to relax from school.

"I love playing just for fun and even teaching. It's nice just being with young kids. It's just a completely different atmosphere from university and it's such a nice change," said Schienmann, who has also received the Rt. Honourable C.D. Howe Memorial Fellowship, for attaining the

"I have to say it's honestly such a surprise

for me. It's not something that I consciously

aimed at, but it's something that I'm happy

that I've attained."

— Christina Sawchuk

highest overall academic standing in her academic program.

Mirroring Schienmann's sentiments, Sawchuk said she feels humbled by the award.

"I have to say it's honestly such a surprise for me. It's not something that I consciously aimed at, but it's something that I'm happy that I've attained," said a very modest Sawchuk.

Despite her impressively high academic standing, Sawchuk tries to balance out her demanding school schedule by participating in the University of Alberta Mixed chorus and the University of Alberta Faculty of Education Handbell Ringers. She credits her musical involvements as a way to unwind after stressful essays and school work.

"I like to think of those rehearsals as my time-out zones where I cannot do school work anymore. In choir, you can still think about other things while you are singing. But when you're playing handbells, you really can't because it's very intense," said Sawchuk.

Sawchuk will be attending the famed Scott Polar Research Institute at the University of Cambridge, England, this fall to continue pursuing her interest in



Christina Sawchuk is one of two winners of the Governor General's Silver Medal.

Polar studies.

"It is probably one of the best places to study the North and the South – the Arctic and Antarctic," she said, noting the com-

prehensive nature of the program.

"I think this will give me a better grounding in my primary subject and more of an interdisciplinary view as well." ■



# Award-winner an innovator in hematology

*Dr. Anna Janowska-Wieczorek has added her name to this year's list of Killam recipients*

By Phoebe Dey

It was as a medical intern in a Warsaw general pediatric ward where Dr. Anna Janowska-Wieczorek first became interested in hematology. She came across a unique case of thrombocytopenia, or reduced platelet count, and was encouraged by the staff to write up the case.

It became her first publication and encouraged her to specialize in hematology. It didn't hurt, says Janowska-Wieczorek, that hematology enjoyed a high reputation in Poland as a medical discipline because of a number of earlier pioneering discoveries.

"I realized that this specialty in particular offered plenty of opportunities for basic research and clinical studies," she said.

The Faculty of Medicine and Dentistry's Janowska-Wieczorek turned that decision into a distinguished career, whose work has had a major impact on the field of stem cell transplantation. The Killam Annual Professorship recipient is a world leader on peripheral blood stem cell mobilization, a process now widely exploited for clinical hematopoietic – blood

making – stem cell transplantation.

Janowska-Wieczorek recognized the potential of her work in a clinical application and was an early advocate for bone marrow transplantation locally. That foresight resulted in the Edmonton Stem Cell Laboratory, a program initially started in the late 1980s as an experimental endeavour in her research lab. Funded by the Canadian Red Cross Services (CRCS), which later became the Canadian Blood Service, Janowska-Wieczorek and the U of A's Dr. Robert Turner introduced stem cell collections and transplants in Edmonton. In fact, they were among the first in the country to introduce this therapy.

Aside from developing the program that was coordinated between the CRCS and the Cross Cancer Institute, Janowska-Wieczorek was responsible for all clinical phases of the initiative including mobilization, collection, processing and thawing of the stem cells. And later on, she helped create the International Society for Hematotherapy and Graft Engineering (ISHAGE), a group dedicated to develop-

ing guidelines for quality and safety issues in the practice.

Janowska-Wieczorek's vision and leadership has impacted cancer therapy in Edmonton and the surrounding area, says Dr. Carol Cass, director of the Cross Cancer Institute and Canada Research Chair in Oncology.

"Dr. Janowska supervised over 1000 stem cell collections that were subsequently used in over 350 successful stem cell transplants in cancer patients," explained Cass.

"She is credited with the development of the Edmonton Stem Cell Program and she also brought recognition to the program, to the Cross Cancer Institute, Canadian Blood Services and the university."

After the lab became fully operational in 2001, the founder devoted more of her energy to other areas of stem cell research, the area that she still finds just as exciting as when she first started.

"The emerging field of stem cells in which I am working holds a lot of promise and has come to the forefront of research in the past few years," she said.

"And the potential for using stem cells to treat other than haematological diseases has become a major focus of research and has caught the imagination of the popular media."

More than 30 years after that first paper sparked her interest in hematology, Janowska-Wieczorek continues to publish at a staggering rate which she thinks, is one reason she has far more applications from students than she can support. And she's grateful for achieving as much as she had, given the challenges of finding research funding.

"As a woman and a foreign graduate, I am proud of still managing to survive in a career in which research funding is very competitive and never guaranteed."

While she continues to immerse herself in the rapidly-developing field of stem cell research, she is pleased to add her name to the list of Killam recipients.

"This represents a high honour, and recognizes years of effort as well as perhaps, some small achievement, in my chosen field." ■

## folio letters to the editor

### Fraser carried on tradition of building bridges to China

Editor, Folio:

While one appreciates the euphoria evident in the pages of Folio over the wind up to President Rod Fraser's term, it is important that his legacy, particularly regarding China, is seen in historical context.

The University of Alberta's contacts with the People's Republic of China go back at least four decades. During the 1960s, U of A academics travelled to China for study and research. Following the recognition of Beijing by Canada in October 1970, U of A scholars were important members of federal delegations in fields

from agriculture to sports. A U of A professor served as Cultural Counsellor in the Canadian Embassy. After the Cultural Revolution, the U of A hosted Chinese professors who upgraded their knowledge without pursuing an advanced degree. Since then a steady stream of Chinese graduate students have come to the U of A for advanced degrees.

In the early 1980s, China opened itself to Canadian International Development Agency projects and the U of A became a participant in new linkages. The School of Business signed an agreement with Xian

Jiaotong that remains active today. The Faculty of Agriculture led a multi-million dollar project to re-vamp state farms, and contacts were made with China's petroleum industry. These linkages were only part of the international picture at the U of A and former University of Alberta president Myer Horowitz, the first U of A president to visit China, established the position of Associate Vice-President, International Affairs.

President Fraser's efforts in China should be seen against the above background. He is to be congratulated for

building on the legacy of his predecessors, and for the enthusiastic way in which he sought out opportunities for the U of A in a China that has become increasingly competitive and that is riding the crest of a wave of modernization in higher education. He should also be commended for his single-minded promotion of a China Institute. One hopes President Fraser's real legacy will be an ingrained passion for China within the university.

Brian L. Evans,  
Professor of History, Emeritus

## talks & events

Submit talks and events to Lorraine Neumayer by 3 p.m. Thursday one week prior to publication. Folio Talks and Events listings will no longer accept submissions via fax, mail, e-mail or phone. Please enter events you'd like to appear in Folio and on ExpressNews at: <http://www.uofaweb.ualberta.ca/events/submit.cfm>. A more comprehensive list of events is available online at [www.event.ualberta.ca](http://www.event.ualberta.ca).

#### UNTIL SEP 01 2005

**Marginal Notes: an exhibition of bookworks concerning social issues** Bruce Peel Special Collections Library, Rutherford South.

#### UNTIL SEP 16 2005

**REWIND: An Exhibition on Windsor Park Community** REWIND focuses on Windsor Park, the community to the west of the University. With a focus on material culture from an historical and social perspective, the exhibition explores the neighbourhood's architectural diversity through a highly developed visual element, accompanied by various stories and captions on the life and vibrancy of the community and its members. Human Ecology Gallery, main floor Human Ecology Building 116 St & 89 Ave.

#### JUNE 10 2005

**Convocation Ceremonies** Spring Convocation Ceremonies 10:00 am ceremony Faculties of Engineering and Agriculture, Forestry, and Home Economics 3:30 p.m. ceremony Faculty of Arts Universiade Pavilion (Butterdome).

**Convocation Breakfast** Graduating Engineering students and their guests are invited to a breakfast in their honour prior to their convocation ceremony. This breakfast is hosted by Dr. David Lynch, Dean of Engineering, and Dr. Jim Montgomery, Engineering's Representative on the U of A Alumni Council. Please note that breakfast will be served up until 9:00 a.m. Engineering Teaching

and Learning Complex (ETLC) 7:30 a.m. - 9:30 a.m.

**Visiting Speaker Seminar: Medical Grand Rounds** Speaker: Dr. Hoby Patrick Hetherington, Director, Magnetic Resonance Research Centre, Albert Einstein College of Medicine, New York. Title: MR Spectroscopic Imaging of Temporal Lobe Epilepsy: The Relationship between Bioenergetics, Histology and Cellular Function" 9:00 a.m. Classroom D, 2J2.14 WMC.

#### JUNE 13 2005

**Seminar** Dr. Mario Feldman, Swiss Federal Institute of Technology, Zurich, Switzerland, will present a seminar entitled "Protein Glycosylation in Bacteria: Towards a New Era in Glycoengineering". Dr. Feldman is a candidate for a Assistant/Associate Professor position in Glycobiology available in the Department of Biological Sciences. Host: Dr. George Owttrim. 3:30 p.m. - 4:30 p.m. M-145 Biological Sciences Bldg.

#### JUNE 14 2005

**CFI Information Session** The Research Services Office is offering an information workshop for those researchers interested in applying to any of the new CFI programs. No registration is required for this session. For more information about the new CFI programs, visit the RSO website. 1:30 p.m. - 2:30 p.m. 239 Central Academic Building.

**Dr. Tapan Basu's Retirement Reception** The Department of Agricultural, Food and Nutritional Science will be hosting a reception to honour Dr. Tapan Basu on the occasion of his retirement as

Professor, Nutritional Biochemistry. Dr. Basu has been at the University of Alberta since July 1981. Cocktails and cash bar will commence at 4:00 p.m. Presentation will start at 4:45 p.m. Please RSVP by June 3rd to Sharon Katzeff at Sharon.Katzeff@ualberta.ca or Tel: (780) 492-0379. If you wish to donate toward a gift for Tapan Basu, please send the cheque payable to the University of Alberta to Sharon Katzeff at: Department of AFNS, 4-10 Agriculture, Forestry Centre, University of Alberta, Edmonton, Alberta, T6G 2P5 4:00 p.m. - 7:30 p.m. Papaschase Room, Upper Level, Faculty Club, University of Alberta.

#### JUNE 15 2005

**Western Canada for Us: The Sudden Rise and Fall of a Canadian Hate Group in 2004** Speaker is Richard Warman, Ottawa human rights lawyer with a strong interest in hate speech and hate spread via the internet. Richard clerked at the Federal Court of Canada and has subsequently worked at the Solicitor General, the federal Department of Justice and the Canadian Human Rights Commission. 7:00 p.m. - 8:30 p.m. Room 158, Education South.

**4th Annual CAMeRA Research Symposium: "Building CAM Research: Case by Case"** CAMeRA's 4th Annual Research Symposium: Building CAM Research highlights the use of case studies, case series, and n-of-1 studies in complementary and alternative medicine. This event aims to facilitate networking between CAM and conventional health practitioners, with the goal of improving knowledge, expertise and collaboration in CAM research

in Alberta. 8:00 a.m. - 5:00 p.m. Telus Centre for Professional Development.

**FACRA (CJSR) needs Board Members** The First Alberta Campus Radio Association (FACRA) is the society that holds CJSR's (FM 88.5) broadcast license. FACRA's Board is ultimately responsible for the well-being of the station. It is here to set the long-term vision for the future of CJSR. It has very little direct involvement in the day-to-day operations of the station. FACRA is looking for students (both undergraduate and graduate) and community members who would be willing to run for vacant Board positions at the AGM on June 15th at 7p.m. in room 2-115 Education North on the U of A Campus. We are looking for people with unique experiences and skills and/or with a management and financial background who would work cooperatively with the rest of the Board to set and monitor the strategic direction of CJSR. Listeners can find out more about the vacancies and the relatively simple process to become a FACRA Board Director by emailing [nominations@cjsr.com](mailto:nominations@cjsr.com) and/or visiting the website [www.cjsr.com](http://www.cjsr.com) before June 15th. 7:00 p.m. 2-115 Education North.

#### JUNE 16 2005

**Guest Speaker** Dr. Lynne Quarmby Associate Professor Dept of Molecular Biology and Biochemistry Simon Fraser University Title: Nek family obligations: Ancestral links to the centriole as basal body 9:30 - 10:30 a.m. 5-10 Medical Sciences Building.

**PhD Thesis Defence** Yaroslav Sydorsky Title: Two novel ribosome biogenesis factors; links



between nucleo-cytoplasmic transport and ribosome biogenesis in *Saccharomyces cerevisiae*. Thursday, June 16th, 2005 11:00 - 12:00 noon Seminar Room 5-10 Medical Sciences Building 11:00 a.m. - 12:00 p.m.

### JUNE 17 2005

**Summer Health Ethics Symposium 2005**  
The John Dossetor Health Ethics Centre invites you to attend a one-day symposium on health ethics. The series of presentations will be interdisciplinary, examining and exploring the essential place of ethics in health care practice. Space is limited. Please check our website for more information. 8:45 a.m. - 4:00 p.m. Stollery Executive Development Centre.

### JUNE 20 – 22 2005

**Canadian WebCT Users' Conference 2005**  
Third annual Canadian WebCT Users' Conference - This event will provide opportunities to network with your Canadian colleagues, to see what's new with WebCT, and to discuss innovative ideas and best practices for teaching and learning using WebCT. Central Academic Building.

### JUNE 21 2005

**"Precarious Work and Lifelong Learning"**  
Papers and panels explore issues of work and learning in precarious employment (temporary, self-employed, part time). Three sessions will be web cast live from Toronto with Edmonton delegates having to participate in the discussion with Toronto delegates. TELUS Centre, University of Alberta.

**Public Information Meeting on Sector 10 Health Sciences Planning** Please join us to learn about University of Alberta Planning concerning Sector 10 (Health Sciences Sector - 87 Avenue to 82 Avenue and 112 Street to 114 Street) and to share your ideas. Development in Sector 10 will have an impact primarily on the University community itself and the neighbouring community of McKernan. 7:00 p.m. McKernan Community Hall, 11341 - 78 Avenue.

### JUNE 21 – 24 2005

**2005 Electrostatics Society of America, 33rd Annual Meeting** The 2005 Electrostatics Society of America (ESA) Annual Conference will be held on the campus of the University of Alberta in Edmonton, from June 21 - 24, 2005. Join us for our technical sessions including comprehensive technical papers, a Student Paper Competition, informal discussions, poster sessions, and electrostatics demonstrations. The Conference addresses the interests of physicists, chemists, biologists, electrical, and aeronautical engineers, as well as those working in biotechnology, nanotechnology, and meteorology. Key speakers: C. Duvvury, Texas Instruments O. Basaran, Purdue University W. Balachandran, Brunel University S. Kuiper, Philips Research C. Calle, NASA Kennedy Space Center I. Aronson, Argonne National R. Blick, University of Wisconsin J. Harrison, University of Alberta Early registration available before May 21st 5:00 p.m.. University of Alberta, Lister Conference Centre.

### JUNE 21 – 22 2005

**One Solstice Universal (U of A Karate Club)**  
The University of Alberta Karate Club will be embarking in a 24-hour class (the longest day of the year) in the Kurimoto Japanese Garden. The purpose of this class is to fundraise for a new Physical Education facility at the University of Alberta, as well as awareness to the Garden. The class will be participating in katas (sequential movements against imaginary opponents), kumite (sparring with other students), and waza (techniques which include blocks, kicks, punches and uses of the shindo). Please join us in this "first time" marathon at the Garden and fulfill an important fundraising cause. Regular admission rates apply. Please contact Visitor Services (780) 987-3054 for further information. 6:00 p.m. 5 KM North of the Town of Devon on Hwy. 60.

### JUNE 22 – 25 2005

**The 2005 Society for Arts in Healthcare Conference** The Society of Arts in Healthcare is dedicated to promoting the incorporation of the arts as an integral component of healthcare. Join internationally renowned Keynote speakers and sessionals at the SAH conference, in Canada for the first time, to explore some of the concepts and developments taking place. We encourage you to visit [www.thesah.org](http://www.thesah.org) for more information. Sutton Place Hotel.

### JUNE 22 2005

**PhD Thesis Defence** Dean Gilham Title: "Characterization and Regulation of Triacylglycerol Hydrolase" Wednesday, June 22nd, 2005 9:30 - 10:30 AM Room 6-28 Medical Sciences Bldg 9:30 a.m. - 10:30 a.m.

**Applying for Research Grants for Faculty Researchers: CIHR Operating Grant** This workshop on Canadian Institutes of Health Research (CIHR) grants will help applicants familiarize themselves with the essential elements of the CIHR

proposals as presented by researchers and CIHR adjudicators.

- The workshop focuses on social and natural sciences researchers in all other Faculties who are interested in applying for a CIHR operating grant.

Workshop is OPEN to all researchers on campus. Please register to [nikki.vandusen@ualberta.ca](mailto:nikki.vandusen@ualberta.ca). 3:00 p.m. - 4:30 p.m. 129 Education Centre.

### JUNE 28 2005

**Applying for AHFMR Training Awards: Information Session for Potential Supervisors**  
Building Research Capacity Workshop Series  
Presenter: Mark Taylor, AHFMR. AHFMR is committed to maintaining Alberta's excellence in medical and health research. One of the ways this is accomplished is through the support of trainees ranging from summer students to clinical fellows. Taylor, Director of Grants and Awards at the Alberta Heritage Foundation for Medical Research, will run a workshop for supervisors of trainees. His presentation will include an overview of AHFMR training programs, a description of the application and review process, and a discussion of how applications can be made as competitive as possible. Contact Nikki Van Dusen at 492-0231 to register. Please feel free to bring your lunch. 11:30 a.m. - 1:00 p.m. 129 Education Centre.

### JULY 1 – 2 2005

**Kurimoto Night Photography (Chantal Thorlakson)** Specializing in outdoor photography, Chantal is developing a dynamic style of nature and landscape photography. She uses dramatic light and painting with light to create striking images. Chantal was born in Tangent, Alberta but grew up in Yellowknife, NWT. She now lives in Sherwood Park, Alberta with her husband and children. As a country girl and northerner, Chantal is an experienced outdoor woman. She has passionately photographed her outdoor adventures, and has started a business called "Country and Nature Photography". Chantal completed a photography certificate program at Metro College in Edmonton and is now a member of the Alberta Professional Photographers Association. Join us at the Devonian Botanical Garden to view spectacular light images which showcase the Kurimoto Japanese Garden in a different light! Visit Chantal's website at: [www.CountryAndNaturePhotography.ca](http://www.CountryAndNaturePhotography.ca). Regular admission rates apply. Contact Visitor Services at (780) 987-3054 for further information. 11:00 a.m. - 5:00 p.m. 5 KM North of the Town of Devon on Hwy 60.

### JULY 1 2005

**Canada Day in the Garden** Join us for Canada Day in the Devonian Botanical Garden featuring tram tours, indoor show houses, art show and a relaxing walk to numerous flower beds in the Garden. Enjoy nature at its best! Your entire family will enjoy one of Alberta's most beautiful settings. (10 per cent of Gate admission will be donated to the University of Alberta United Way Campaign). Regular admission rates apply. Contact Visitor Services at (780) 987-3054 for further information. 12:00 p.m. - 4:00 p.m. 5 KM North of the Town of Devon Hwy. 60.



**Angela Anghelone**

In memory of our dear friend and colleague, the Department of Computing Science will be holding a tree planting dedication. It will be on Wednesday, June 15 at 2 pm in front of Athabasca Hall. Everyone is welcome to attend. For more information, please call 492-4194.

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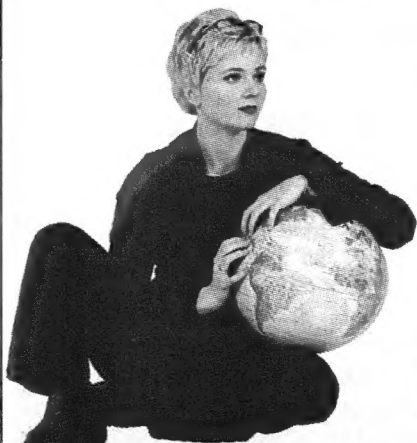




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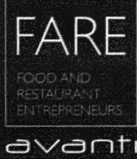
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Qualified applicants should send a curriculum vitae, a statement of clinical education and teaching interests and the names of three (3) referees to:

Dr. A. Cook, Dean  
Faculty of Rehabilitation Medicine  
3-48 Corbett Hall  
University of Alberta  
Edmonton, Alberta, Canada  
T6G 2G4 Phone: 780-492-5991  
e-mail: [albert.cook@ualberta.ca](mailto:albert.cook@ualberta.ca)

Review of applications will commence on June 15, 2005 and continue until the position is filled. Further information on the positions may be obtained by contacting:

Dr. Jaynie Yang, Acting Chair  
Department of Physical Therapy  
Phone: 780-492-5984  
Email: [jaynie.yang@ualberta.ca](mailto:jaynie.yang@ualberta.ca)

# notices

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## 2005-2006 KILLAM ANNUAL PROFESSORS

The Office of the Vice-President (Research) in conjunction with the Killam Trustees takes pleasure in announcing the 2005-2006 Killam Annual Professors:

Dr Peter Boxall, Department of Rural Economy;  
Dr. Warren Finlay, Department of Mechanical Engineering; Dr. Fakhreddin Jamali, Faculty of Pharmacy and Pharmaceutical Sciences; Dr. David

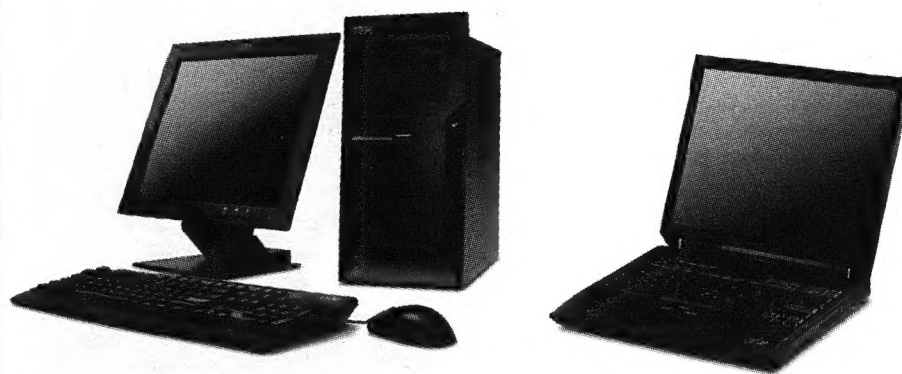
Marples Department of History and Classics;  
Dr. George Pemberton, Department of Earth and Atmospheric Sciences; Dr. Max van Manen, Department of Secondary Education; Dr. Joel Weiner, Department of Biochemistry; Dr. Wilsun Xu, Department of Electrical and Computer Engineering.

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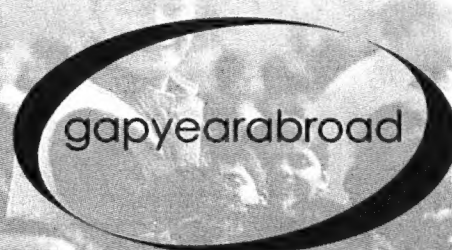
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## Call For Letters of Intent to the Health Research Fund

The Health Research Fund (HRF) provides opportunities for relevant, high-quality health research across the entire spectrum of research areas, including mental health. The Fund is administered by the Alberta Heritage Foundation for Medical Research (AHFMR) on behalf of Alberta Health and Wellness.

AHFMR invites individuals/ organizations interested in applying for funding to submit a Letter of Intent by **Friday, September 9, 2005.**

This Call for Letters of Intent is a competitive process. Based on the opinions of expert reviewers, AHFMR will invite formal proposals from selected applicants. To be successful in the competition at the Letter of Intent stage, and later at the formal proposal stage, projects must meet the following criteria:

- Applications must be submitted by Alberta-based teams which include both researchers and decision makers and/or users of health research information;
- Three broad areas will be supported: health services research, population health research, and health technology assessment research;
- Proposals will be evaluated on

a number of criteria including scientific merit; prevalence of disease or condition; alliances and partnerships; impact on quality of life and health outcomes; impact on broad determinants of health; potential economic impact; research opportunities; and potential to address ethical, legal, and social issues.

**The Letter of Intent application form and other important information pertaining to this competition can be found at**  
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# ART IMITATING LIFE SCIENCE

## Marc Brisbane's web application helps medical students

By Shawn Benbow

Finishing his masters degree in Design and Visual Communication Design, Marc Brisbane found his inspiration from an unlikely source – medical students. After working for the multimedia development group in the Faculty of Medicine for six years, Brisbane saw that the faculty sometimes had trouble coordinating tutors and students for group problem sessions.

Brisbane's thesis presentation, Collaborative construction of diagrams for higher-order thinking: Providing a framework to help medical students diagnose patient cases was on display at the Fine Arts Building Gallery from May 24 through June 4.

A major component of medical students' learning comes from group sessions in which students gather with a senior physician tutor to solve simulated patient cases – a technique referred to as problem-based learning, Brisbane said.

"Students work under the guidance of a tutor to help solve each case," he said. "Problem-based learning is intended to integrate basic science and clinical reasoning to create doctors who are better at the reasoning process."

However, the faculty has run into trouble getting physicians to come away from their research and practices to tutor the learning groups.

"Some of the teaching blocks that have had trouble getting tutors are therefore not doing any problem-based learning – but it's supposed to be such a helpful tool," Brisbane said.

"So I'm proposing a web-based application – more than just a static set of web pages – and this is a tool to support some things that happen in a problem-based, learning tutorial, not as a replacement."

Brisbane envisioned cutting down the number of hours required of the tutors while still allowing students to work in

learning groups.

Brisbane says that his program will assist students in the early stages of the tutorials organize their thoughts before the tutors arrive.

This application is innovative in that it encourages non-linear thinking.

"Presenting information in a diagrammatic way allows you to see the simultaneous presentation of information. You can see hierarchies, inclusions, relationships between information that is prohibitive in a linear text document or a traditional on-line forum," he said.

"One way I could have approached this problem would be to use an on-line forum, but I believe that visual diagrams are a much more powerful way of visualizing things."

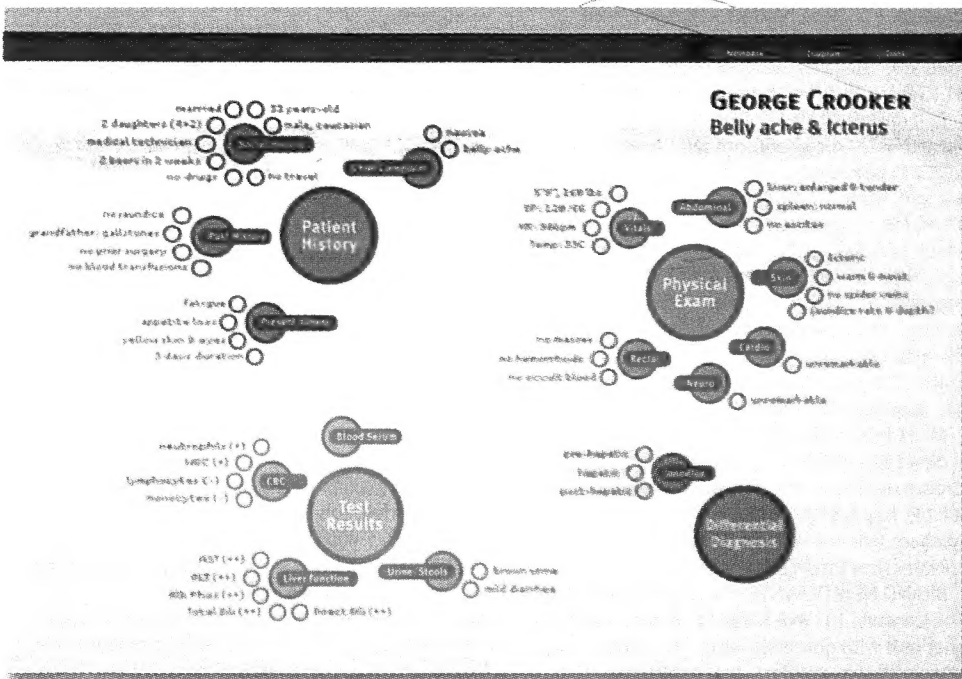
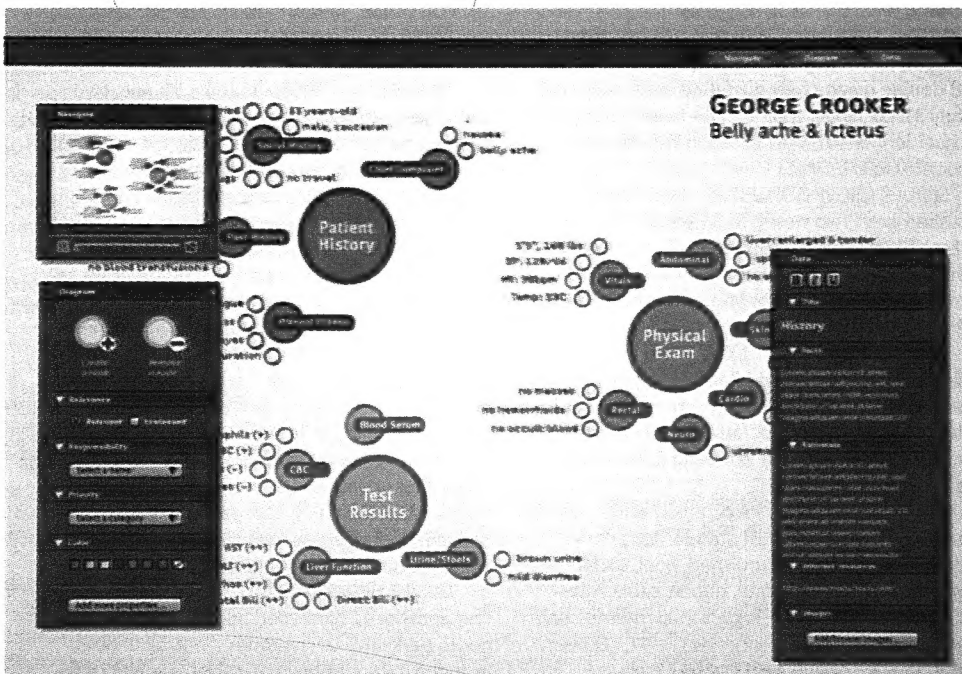
So far, feedback from several test sessions has been positive, and he has received an Access Grant to continue this project past his thesis presentation. However, Brisbane notes that he was surprised to find that students like personal interaction in the learning sessions.

"I thought that students would be comfortable collaborating with each other at a distance, from their home computers," he said. "But they said they would much prefer working as a group in front of a computer."

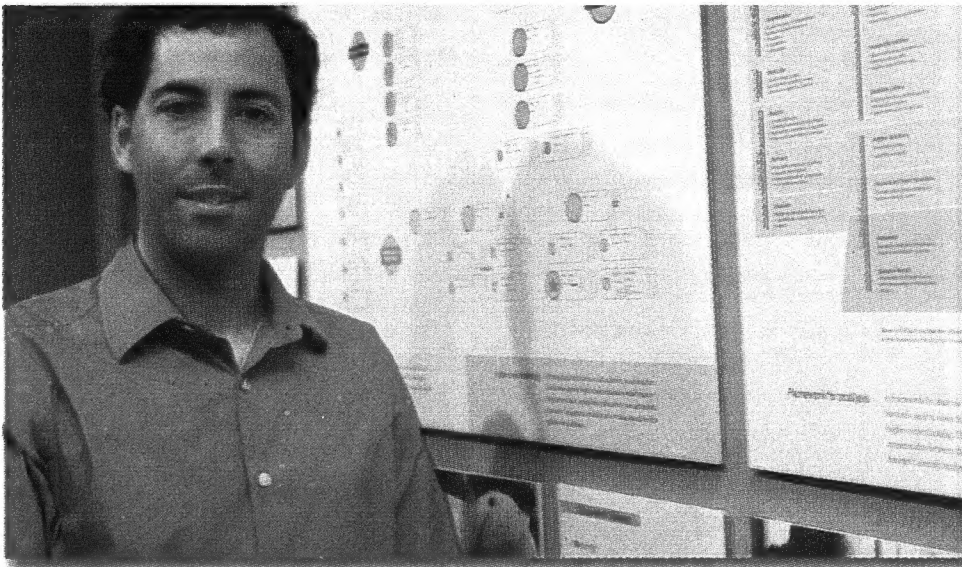
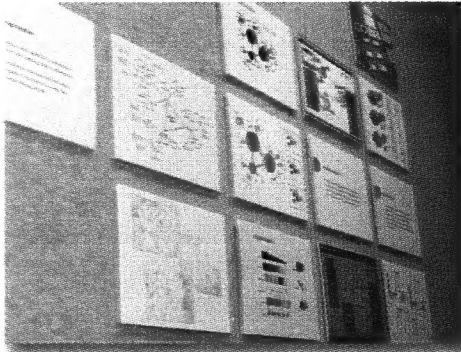
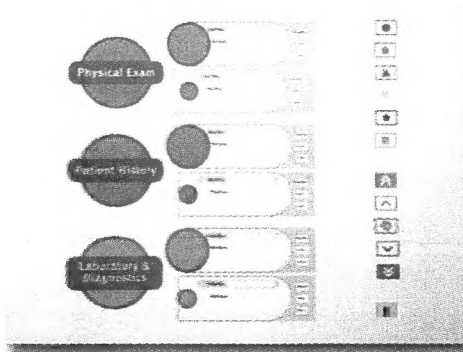
Brisbane is quick to point out that this project wouldn't have been possible without input from the medical students, doctors, and colleagues.

"One of the reasons I went into the masters program is that I identified gaps in my education and I thought that it would answer some of my questions. It's opened a million more instead," Brisbane said. "I think that it's refined my skills as a designer, a teacher, and also as a multimedia developer."

"And it's also confirmed my ideas in the power of diagrams." ■



Marc Brisbane (below left) helps medical students learn case studies with visually pleasing diagrams.



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